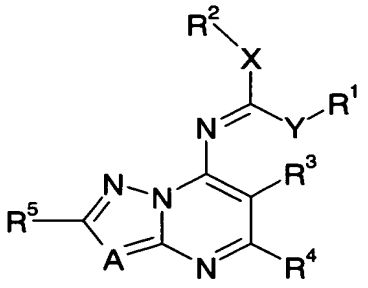
Claims

1. An azolopyrimidine compound of the formula I



(I)

in which

A is N or C-R^6;

X, Y independently of one another are a chemical bond or oxygen, sulfur or a group N-R^7;

R^1, R^2 independently of one another are C_1-C_{10}-alkyl, C_2-C_{10}-alkenyl, C_4-C_{10}-alkadienyl, C_2-C_{10}-alkynyl, C_3-C_8-cycloalkyl, C_5-C_8-cycloalkenyl, C_5-C_{10}-bicycloalkyl, phenyl, phenyl-C_1-C_4-alkyl, naphthyl, naphthyl-C_1-C_4-alkyl, 5- or 6-membered saturated, partially unsaturated or aromatic heterocyclyl or heterocyclyl-C_1-C_4-alkyl which may in each case have 1, 2 or 3 heteroatoms selected from the group consisting of N, O and S as ring members,
where some or all of the radicals mentioned as R^1, R^2 may be halogenated or may have 1, 2, 3 or 4 radicals R^8, where

Y-R^1 and X-R^2 together with the carbon atom, to which they are attached, may also form a 5-, 6- or 7-membered saturated or unsaturated carbo- or heterocycle, where the latter may have 1, 2, 3 or 4 heteroatoms selected from the group consisting of O, S and N as ring members, where the carbo- and the heterocycle may be partially or fully halogenated or have 1, 2, 3 or 4 of the radicals R^7 and/or R^8; where

Y-R^1 and X-R^2 independently of one another may also be hydrogen, CN, NO_2 or halogen and where one of the radicals Y-R^1 and X-R^2 may also be OH, SH or NH_2;

R^3 is C_1-C_{10}-alkyl, C_2-C_{10}-alkenyl, C_4-C_{10}-alkadienyl, C_2-C_{10}-alkynyl, C_3-C_8-cycloalkyl, C_5-C_8-cycloalkenyl, C_5-C_{10}-bicycloalkyl, phenyl, phenyl-C_1-C_4-alkyl, naphthyl, a 5- or 6-membered saturated, partially unsatu-

rated or aromatic heterocycle which may have 1, 2 or 3 heteroatoms selected from the group consisting of N, O and S as ring members, where the radicals mentioned as R^3 may be partially or fully halogenated or may have 1, 2, 3 or 4 radicals R^9;

R^4 is halogen, cyano, C_1-C_6-alkyl, C_1-C_6-haloalkyl, C_2-C_6-alkenyl, C_2-C_6-alkynyl, C_3-C_8-cycloalkyl, C_5-C_8-cycloalkenyl, OR^{10}, SR^{10}, $NR^{11}R^{12}$, $CH_2NR^{11}R^{12}$ or $C(W)R^{13}$;

R^5, R^6 independently of one another are hydrogen, CN, NO_2, NH_2, CH_2NH_2, halogen, $C(W)R^{13}$, $C(=N\text{-}OR^{15})R^{14}$, $NHC(W)R^{16}$, C_1-C_6-haloalkyl, C_1-C_4-alkyl or C_2-C_4-alkenyl;

R^7 is hydrogen, C_1-C_6-alkyl, C_1-C_6-alkoxy, C_1-C_6-haloalkyl, C_1-C_6-haloalkoxy, C_2-C_6-alkenyl, C_2-C_6-alkenyloxy, CN or $C(W)R^{17}$;

R^8 is selected from the group consisting of halogen, cyano, nitro, OH, SH, $NR^{18}R^{19}$, C_1-C_6-alkyl, C_3-C_8-cycloalkyl, C_1-C_6-alkoxy, hydroxy-C_1-C_6-alkyl, hydroxy-C_1-C_6-alkoxy, C_1-C_6-alkoxy-C_1-C_6-alkyl, C_1-C_6-alkoxy-C_1-C_6-alkoxy, C_1-C_6-haloalkyl, C_1-C_6-haloalkoxy, C_1-C_6-alkylthio, C_2-C_6-alkenyl, C_2-C_6-alkenyloxy, C_2-C_6-alkynyl, C_2-C_6-alkynyloxy, C_1-C_6-alkylamino, $C(W)R^{13}$, $C(=N\text{-}OR^{15})R^{14}$, $NHC(W)R^{16}$, tris-C_1-C_6-alkylsilyl and phenyl which for its part may have 1, 2 or 3 radicals selected from the group consisting of cyano, nitro, halogen, OH, C_1-C_6-alkyl, C_1-C_6-alkoxy, C_1-C_6-haloalkyl, C_1-C_6-haloalkoxy and C_1-C_6-alkylthio;

R^9 is halogen, cyano, NH_2, NO_2, C_1-C_6-alkyl, C_3-C_8-cycloalkyl, C_1-C_6-alkoxy, C_1-C_6-haloalkyl, C_1-C_6-haloalkoxy, C_2-C_6-alkenyl, C_2-C_6-alkenyloxy, $C(W)R^{13}$, $C(=N\text{-}OR^{15})R^{14}$ or $NHC(W)R^{16}$;

R^{10} is hydrogen, C_1-C_6-alkyl, C_1-C_6-haloalkyl, C_2-C_6-alkenyl or $C(W)R^{13}$;

R^{11}, R^{12} independently of one another are hydrogen, C_1-C_6-alkyl, C_2-C_6-alkenyl, C_4-C_6-alkadienyl, C_2-C_6-alkynyl, C_3-C_8-cycloalkyl, C_5-C_8-cycloalkenyl, where the radicals mentioned as R^{11}, R^{12} may be partially or fully halogenated or have 1, 2, 3 or 4 radicals R^8, where R^{11} may also be a group $C(W)R^{13}$ and where

R^{11}, R^{12} together with the nitrogen atom, to which they are attached, may also form a 5-, 6- or 7-membered saturated or unsaturated heterocycle which may additionally have 1, 2 or 3 further heteroatoms selected from the group consisting of O, S and N as ring members, where the

heterocycle may be partially or fully halogenated and/or may have 1, 2, 3 or 4 of the radicals R^8;

R^{13} is hydrogen, OH, C_1-C_6-alkyl, C_1-C_6-alkoxy, C_1-C_6-haloalkyl, C_1-C_6-haloalkoxy, C_2-C_6-alkenyl or $NR^{18}R^{19}$;

R^{14}, R^{15} independently of one another are hydrogen or C_1-C_6-alkyl;

R^{16}, R^{17} independently of one another are hydrogen, C_1-C_6-alkyl, C_1-C_6-alkoxy, NH_2, C_1-C_6-alkylamino or di-C_1-C_6-alkylamino;

R^{18}, R^{19} independently of one another have the meanings mentioned for R^{11} and R^{12}; and

W is oxygen or sulfur;

the tautomers of the compounds I and the agriculturally acceptable salts of the compounds I and their tautomers.

2. The compound of the formula I according to claim 1 in which at least one of the variables X or Y is a chemical bond.

3. The compound of the formula I according to claim 2 in which one of the groups Y-R^1 or X-R^2 is hydrogen or C_1-C_4-alkyl.

4. The compound of the formula I according to any of the preceding claims in which both variables X and Y are a chemical bond.

5. The compound of the formula I according to claim 4 in which R^1 and R^2 independently of one another are selected from the group consisting of hydrogen, C_1-C_{10}-alkyl, C_1-C_{10}-haloalkyl, C_3-C_{10}-alkenyl, C_3-C_{10}-haloalkenyl, C_3-C_8-cycloalkyl, C_5-C_8-cycloalkenyl, C_3-C_8-cycloalkyl-C_1-C_{10}-alkyl, C_3-C_8-cycloalkyl-C_2-C_{10}-alkenyl, phenyl and benzyl, where the 6 lastmentioned radicals may also carry 1, 2, 3 or 4 substituents selected from the group consisting of halogen, C_1-C_4-alkyl, C_1-C_4-haloalkyl and C_1-C_4-alkoxy.

6. The compound of the formula I according to claim 4 in which one of the groups R^1 or R^2 is halogen.

7. The compound of the formula I according to claim 6 in which the remaining group R^1 or R^2 is hydrogen, C_1-C_{10}-alkyl, C_1-C_{10}-haloalkyl, C_3-C_{10}-alkenyl, C_3-C_{10}-haloalkenyl, C_3-C_8-cycloalkyl, C_5-C_8-cycloalkenyl, C_3-C_8-cycloalkyl-C_1-C_{10}-alkyl, C_3-C_8-cycloalkyl-C_2-C_{10}-alkenyl, phenyl or benzyl, where the 6 lastmentioned

radicals may also carry 1, 2, 3 or 4 substituents selected from the group consisting of halogen, C_1-C_4-alkyl, C_1-C_4-haloalkyl and C_1-C_4-alkoxy.

8. The compound of the formula I according to any of claims 1 to 3 in which the group Y-R^1 is a group (NR^7)-R^1, in which R^7 is as defined above and R^1 is C_1-C_{10}-alkyl, C_2-C_{10}-alkenyl, C_4-C_{10}-alkadienyl, C_2-C_{10}-alkynyl, C_3-C_8-cycloalkyl, C_5-C_8-cycloalkenyl, C_5-C_{10}-bicycloalkyl, phenyl, phenyl-C_1-C_4-alkyl, naphthyl, naphthyl-C_1-C_4-alkyl and where the radicals mentioned as R^1 may be partially or fully halogenated and/or may have 1, 2, 3 or 4 radicals R^8, or

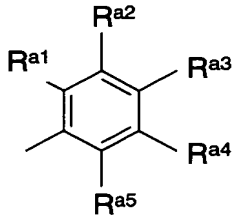
R^1 and R^2 together with the nitrogen atom to which they are attached form a 5- or 6-membered saturated, partially unsaturated or aromatic N-heterocycle which may have one or two further heteroatoms selected from the group consisting of O, S and N as ring member and/or may have 1, 2, 3 or 4 radicals R^8.

9. The compound of the formula I according to claim 8 in which X is a chemical bond and R^2 is hydrogen or C_1-C_4-alkyl.

10. The compound of the formula I according to claim 8 or 9 in which the group $(NR^7)R^1$ is C_1-C_6-alkylamino, di-C_1-C_6-alkylamino or a 5- or 6-membered saturated heterocyclyl which is attached via nitrogen, which optionally has a further heteroatom selected from the group consisting of N, O and S as ring atom and which optionally carries, 1, 2, 3 or 4 substituents R^8 selected from the group consisting of halogen and C_1-C_4-alkyl.

11. The compound of the formula I according to any of the preceding claims in which R^3 is a phenyl ring which has 1, 2, 3 or 4 radicals R^9.

12. The compound of the formula I according to claim 11 in which R^3 is a group of the formula



in which

R^{a1} is fluorine, chlorine, trifluoromethyl or methyl;

R^{a2} is hydrogen, chlorine or fluorine;

R^{a3} is hydrogen, CN, NO_2, fluorine, chlorine, C_1-C_4-alkyl, C_1-C_4-alkoxy or a group $C(W)R^{13a}$ in which R^{13a} is C_1-C_4-alkoxy, NH_2, C_1-C_4-alkylamino or di-C_1-C_4-alkylamino;

R^{a4} is hydrogen, chlorine or fluorine;

R^{a5} is hydrogen, fluorine, chlorine or C_1-C_4-alkyl.

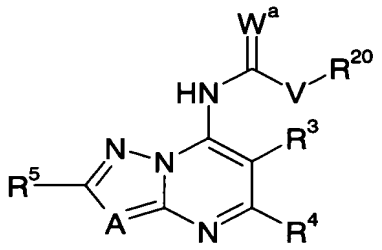
13. The compound of the formula I according to any of the preceding claims in which R^4 is halogen, CN, methyl or methoxy.

14. The compound of the formula I according to claim 13 in which R^4 is halogen.

15. The compound of the formula I according to any of the preceding claims in which R^5 is hydrogen.

16. The compound of the formula I according to any of the preceding claims in which A is N.

17. The compound according to any of the preceding claims in the form of the tautomers of the formula II



(II)

in which A, R^3, R^4 and R^5 have the meanings given above for formula I,

V is a chemical bond or is oxygen, sulfur or a group N-R^7;

W^a is O, S or a group N-R^{21};

R^{20} has one of the meanings given in formula I for R^1 or R^2;

R^{21} has one of the meanings given in formula I for R^1 or R^2 or is hydrogen; and

if W^a is N-R^{21}, V-R^{20} and N-R^{21} together with the carbon atom, to which they are attached, may form a 5-, 6- or 7-membered unsaturated heterocycle, where the latter may have 1, 2, 3 or 4 heteroatoms selected from the group consisting of O, S and N as ring members, may be partially or fully halogenated or have 1, 2, 3 or 4 of the radicals R^8 mentioned above.

18. The use of a compound of the formula I according to any of claims 1 to 17 or an agriculturally acceptable salt thereof for controlling phytopathogenic fungi.

19. A composition for controlling phytopathogenic fungi, which composition comprises at least one compound of the formula I according to any of claims 1 to 17 and/or an agriculturally acceptable salt of I and at least one liquid or solid carrier.

20. A method for controlling phytopathogenic fungi, which method comprises treating the fungi or the materials, plants, the soil or seeds to be protected against fungal attack with an effective amount of a compound of the formula I according to any of claims 1 to 17 and/or with an agriculturally acceptable salt of I.